

WHITE HORSE PIKE ROND POINT

(Collingswood Circle)

Intersection of Crescent Boulevard (US 130),

White Horse Pike (US 30), and Clay Avenue

Collingswood

Camden County

New Jersey

HAER NO. NJ-114

HAER

NJ

4-COLWO,

4-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD

National Park Service

Philadelphia Support Office

U.S. Custom House

200 Chestnut Street

Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD
WHITE HORSE PIKE ROND POINT
(Collingswood Circle)

HAER
NJ
4-COLLINGWOOD,
4-
HAER No. NJ-114

Location: Intersection of Crescent Boulevard (US 130), White Horse Pike (US 30), and Clay Avenue
Collingswood
Camden County, New Jersey

UTM Coordinates: 18.492350.4418520
USGS Quad: Camden, New Jersey-Pennsylvania, 1:24,000

Date of Construction: 1927

Engineer: Harold W. Giffin, Field Engineer
New Jersey State Highway Department

Builder: Union Paving Company, Philadelphia

Present Owner: State of New Jersey

Present Use: Traffic circle

Significance: This traffic circle is part of the Camden Extension project, designed to connect state highway routes outside of Camden with the new Camden-Philadelphia Bridge. The structure was one of the early complex traffic circles in the state that sought to integrate an existing road pattern within a new planned through road. The result of pioneering efforts in traffic engineering, the circle has remained virtually unaltered since its construction.

Project Information Statement: As part of a transportation project to improve traffic flow and safety at the Collingswood Circle intersection, the traffic circle will be demolished to be replaced with a series of controlled signalized intersections. The New Jersey State Historic Preservation Office (SHPO) recommends documentation of the circle prior to its elimination, as a mitigation measure.

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Summary Description of Traffic Circle and Setting

The White Horse Pike Rond Point, or traffic circle, forms the intersection between Crescent Boulevard (US 130), White Horse Pike (US 30), and Clay Avenue. Originally, Richey Avenue crossed Crescent Boulevard at the southern limits of the circle, and Park Avenue crossed at the northern limits, but those portions of the intersection have been closed. Constructed in 1927 by the New Jersey State Highway Department, the circle consists of a central island around which three roads rotate providing five inlets/outlets for traffic. Four smaller directional islands, triangular in shape, guide traffic through the structure. The purpose of a traffic circle is to provide for the simultaneous and continuous flow and distribution of traffic in a one-way, counterclockwise movement by eliminating left-hand turns across opposing lanes of traffic. Located on the circle is the Pure Oil Service Station (HABS No. NJ-1234) constructed ca. 1935.

The central island of the White Horse Pike Rond Point is an asymmetrical oval figure with a flat side on the northwest bounded by Clay Avenue. Its minimum diameter is 110 feet and its maximum diameter is approximately 325 feet. The island is grass covered and slopes outward at the edges toward the roadway. Shrubbery provides screening, a defensive measure in answer to sight line problems across the island as early as 1928. Curbs of the central island and the directional islands are low concrete curbs with vertical faces.

The circle's roadway varies in width from 32 feet to 50 feet. A 4-foot median with a 32-inch Jersey-type concrete barrier is located between the lanes. The roadway is covered with reinforced concrete in all sections, except the portion of US 30/US 130 at the north end of the island. This section has an asphalt wearing surface. The tightest curve on the infield of the rotary has a radius of 75 feet, and is located at the northeastern end of the circle opposite Crescent Boulevard (US 30/US 130). Movement within the circle consists of one crossing and two non-crossing maneuvers. These motions are referred to as weaving. The weaving length determines how swiftly or slowly the traffic moves. Weaving length between the White Horse Pike (US 30 West) and Crescent Boulevard (US 30 West/US 130 North) is approximately 250 feet; the weaving length between Crescent Boulevard (US 130 West) and the White Horse Pike (US 30 East) is approximately 175 feet.

Modifications to the traffic circle occurred in 1947. US 130/30 was widened from 26 feet in each direction to 31 feet with a 4-foot median. At that time, US 130 South was similarly widened with a 3-foot-wide median. During the road widening, portions of the original concrete curbing were replaced with white cement reflective curbing, especially near entrances and exits. Additional modifications to the circle included supplementary plantings on the center island to screen traffic, the construction of a median mall that extended from the US 130 islands, the elimination of the direct crossings of Richey and Park avenues, and the removal of the directional island at the northwest intersection of the circle and White Horse Pike.

Historical Background of the White Horse Pike Rond Point

Constructed in 1927, the White Horse Pike Rond Point was part of the greater Camden Extension project, in progress from 1924 to 1929. This highway (originally Route 45, but presently US 130 or Crescent Boulevard) was designed specifically to funnel traffic through the Camden area directly to the newly-constructed Camden-Philadelphia Bridge (now the Ben Franklin Bridge) into Philadelphia, Pennsylvania. The construction of the bridge was just the first component of a larger economic effort called the Greater Camden Movement. This movement ultimately developed a master plan for county public services including roads, parks, and education in the Camden area.

Early automobile traffic in Camden's outlying areas often backed up at local intersections causing gridlock. Roadways, originally constructed for use by horse-drawn traffic, could not adequately handle the larger, heavier, and faster motorized vehicles. The situation was even worse in the city of Camden, where traffic would back up along the approach to ferries used to transport it across the Delaware River to Philadelphia, Pennsylvania. To relieve the congestion and to spur the economic growth of the area, a movement was started as early as 1908 to construct a bridge across the river to facilitate the movement of traffic into and out of the city. Construction of the bridge commenced in 1922. In 1926, the Camden-Philadelphia Bridge was completed.¹

It was apparent that local roads would not be able to deal with the increased traffic associated with the new bridge. Existing roads in the area were incapable of handling such heavy traffic volumes, as well as being too narrow, poorly drained, dangerously aligned, and inadequately marked. To ease new traffic pattern problems caused by the bridge, the State Highway Department devised plans for a modern through highway. This highway, originally planned in 1924 (redesigned in 1926) and called the Camden Extension, was designed to separate local traffic from through traffic headed to and from Philadelphia to eliminate interference from city streets. The highway was one of New Jersey's first multi-lane motorways designed exclusively for automobile traffic. As such, new aspects of highway design were considered including road foundation and surface materials, highway safety, curvatures, maximum grade, and intersection design. One of the unique intersection features of the Camden Extension was the use of an interconnected series of traffic circles.

¹ The Camden-Philadelphia Bridge was renamed the Ben Franklin Bridge in 1955.

The White Horse Pike Rond Point was an early rotary built in conjunction with the highway project. The circle was designed at a period when engineering specifications for such structures were still as yet to be defined. Rotaries were not uncommon in downtown areas of many parts of the country, but the use of such a structure in a highway design was a rare concept. The Camden Extension called for the construction of several rotaries along its length.

Camden Extension's traffic circles, including the one at Collingswood, were among the first rotaries in New Jersey and in the United State adapted for use a part of an integrated state highway system. The circle was devised by New Jersey State Highway Department, a national leader in intersection design. Heading the project was field engineer Harold W. Giffin, its leading engineer of traffic circles. Giffin reflected the department's point of view that each intersection was "a separate problem requiring an individual solution."

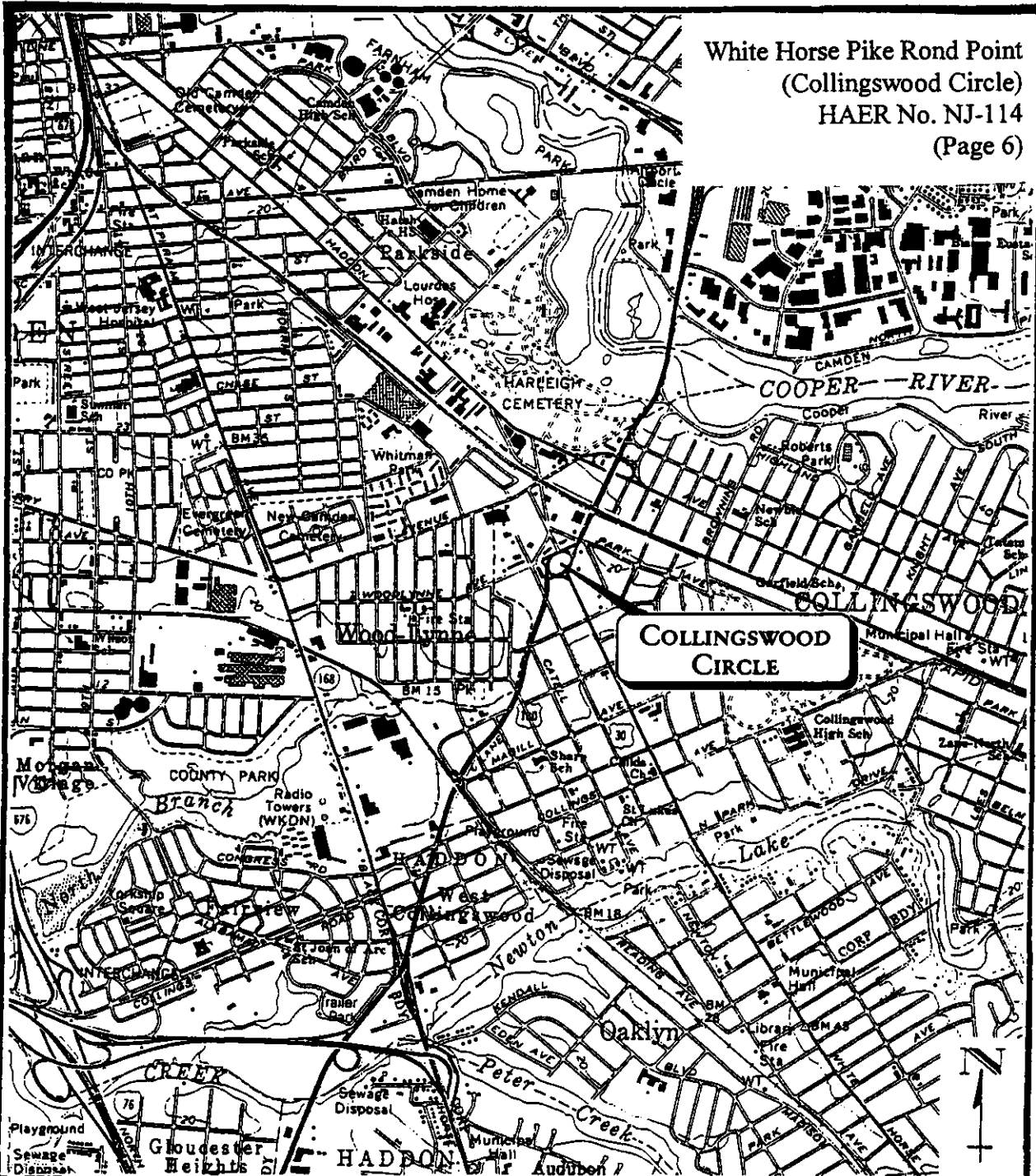
The White Horse Pike Rond Point was designed in such a way as to integrate the existing road network with the newly-planned through highway, yet at the same time separate local traffic from through traffic to eliminate congestion. The rotary was to allow traffic to continually merge with or split off from the through highway with only a minor reduction of speed. Since left hand turns were eliminated and traffic moved in only one direction around the structure, a constant flow could be maintained. The circle was completed in 1927 by contractor Union Paving Company of Philadelphia.

As one of the earlier rotaries in New Jersey, the White Horse Pike Rond Point served as a prototype for approximately 60 traffic circles built in the state from 1927 to 1952. However, the circle was designed without fully anticipating the exponential growth of the area or the speed and quantity of traffic that would use it in the future. Development along the Camden Extension drew more local traffic into the area. By the 1940s, the inadequacies of this and other circles along the highway were apparent. In 1947, the State Highway Department modified the White Horse Pike Rond Point in an attempt to rectify these problems, including roadway widening and resurfacing. Traffic control signals, such as the flashing beacon at the entrance from Crescent Boulevard post-dates the 1947 modifications.

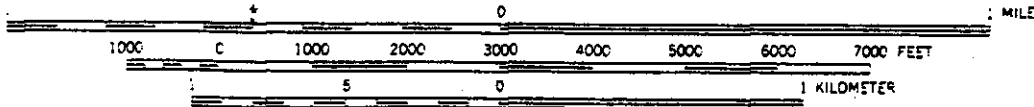
Bibliography

- American Association of State Highway Officials. *A Policy on Rotary Intersection*. Washington, D.C.: 1942.
- Andariese, Walter S. *History of the Ben Franklin Bridge*. Camden, 1981.
- Brown, G. W. and Co. *Map of Philadelphia and Environs*. Philadelphia, 1915.
- Carswell, Charles. *The Building of the Delaware River Bridge*. Burlington, New Jersey, 1926.
- Dorwart, Jeffrey M. and Philip E. Mackey. *Camden County, New Jersey, 1616-1976*. Camden, 1976.
- Hill, C. S. "Intersection Design a Primary Highway Problem in New Jersey." *Engineering News Record* (November 26, 1931), 834-38.
- Lichtenstein, A. G. and Associates, Inc. Cultural Resources Assessment, Collingswood Circle Elimination Project, Collingswood Borough and Camden, Camden County, New Jersey. Report prepared for New Jersey Department of Transportation, Bureau of Environmental Analysis, Trenton, New Jersey, 1995.
- New Jersey State Highway Department. *Annual Reports*. Trenton, New Jersey, 1922-32.
- Todd, Kenneth. "A History of Roundabouts in the United States and France. *Transportation Quarterly* 42, 4 (October 1988), 599-623.
- Tuttle, L. S. and E. H. and Holmes. "The Design of Street and Highway Intersection." *Public Roads* 13,5 (July 1932): 73-88.

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SCALE 1:24 000



CONTOUR INTERVAL 20 FEET

Camden, NJ-PA
1967 (PR 1994)